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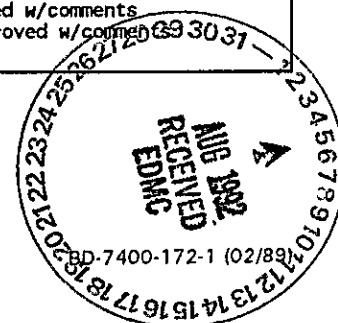
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7. Abstract

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This plan describes the site activities to be performed in completing expedited response actions (ERA) at waste sites located on the Hanford Site's North Slope. The plan includes a preliminary screening of alternatives, identifies site evaluation tasks, ERA proposal development tasks, and includes a project schedule. The plan also discusses the removal of physical hazards associated with both homesteading and military sites.

Gustafson, F. G., 1992, *North Slope Expedited Response Action Project Plan*, WHC-SD-EN-TTP-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

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10.

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CONTENTS

1.0	INTRODUCTION	1
2.0	SITE DESCRIPTION	1
2.1	MILITARY SITES	3
2.2	HOMESTEAD SITES	4
2.3	CORRECTIVE ACTIONS TAKEN	5
3.0	PRELIMINARY IDENTIFICATION AND SCREENING OF ALTERNATIVES	5
4.0	SITE EVALUATION TASKS	5
5.0	ERA PROPOSAL TASKS	7
6.0	ERA IMPLEMENTATION	8
7.0	PROJECT SCHEDULE	8
8.0	REFERENCES	8

FIGURES:

1.	North Slope Area Map Depicting Site Investigation Locations	2
2.	Project Schedule for the North Slope Expedited Response Action	9

ATTACHMENTS:

1.	Health and Safety Plan	1-1
2.	Project Management Plan	2-1
3.	Data Management Plan	3-1
4.	Community Relations Plan	4-1

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1.0 INTRODUCTION

Implementation of expedited response actions (ERA) at several Hanford waste sites has proven to be a successful avenue for performing early cleanup activities associated with the Hanford's Environmental Restoration Program. Under the direction of the U.S. Environmental Protection Agency (EPA) and Washington Department of Ecology (Ecology), the U.S. Department of Energy (DOE) has been requested to initiate the ERA process at waste sites located in the north slope area of the Hanford Site (Figure 1).

This ERA is considered to be non-time critical such that a planning period of at least 6 months exists before implementation of the ERA activities. Under the requirements of a non-time critical ERA, an engineering evaluation/cost assessment (EE/CA) must be prepared that identifies, evaluates, and recommends remedial actions for minimizing/eliminating the environmental hazards present. Physical hazards present on the North Slope will be addressed by this ERA.

This project plan provides information pertaining to the implementation of the ERA including:

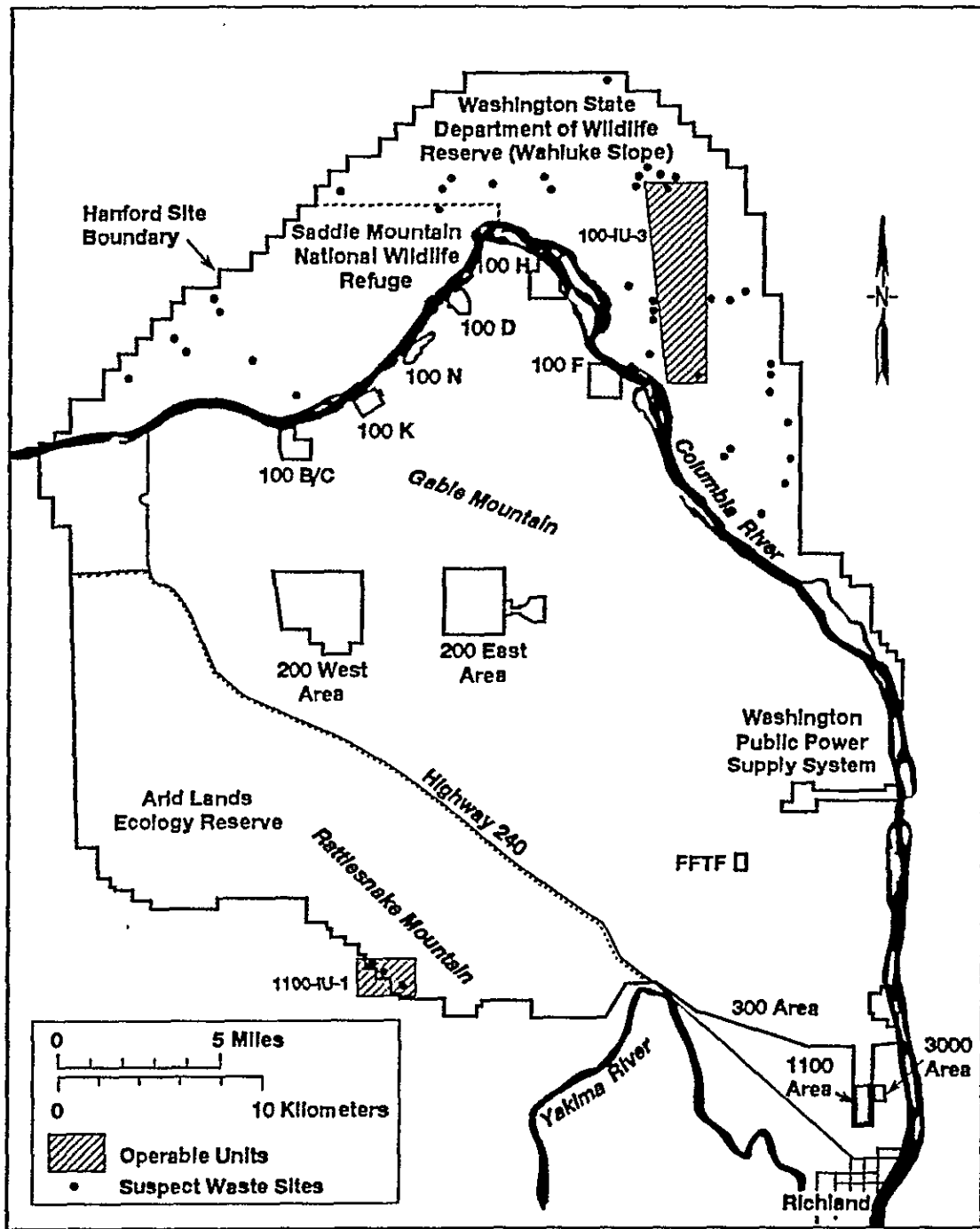
- the identification of potential remedial actions
- characterization activities needed to support selection of the preferred remedial action
- ERA proposal development tasks which includes preparation of the EE/CA
- general remedial alternative implementation tasks
- project schedule.

2.0 SITE DESCRIPTION

The North Slope area was used for military defense of the Hanford Site. Defense positions originally consisted of seven antiaircraft gun emplacements that were eventually replaced with three Nike missile positions. There has been no permanent military installations in the area since approximately 1960. The North Slope area is permitted by DOE to the Washington Department of Wildlife and the U.S. Fish and Wildlife Service. As a result, much of the area has been opened for public access with the remainder designated as a wildlife refuge.

In 1990, an extensive investigation of the North Slope area was performed to assess potential health, safety, and environmental concerns raised to DOE by Ecology and the public. As a result of this survey, 39 sites associated with either military or homesteading activities were discovered on the North Slope. The following text describing the military and homesteading areas was taken from the *North Slope Investigation Report* (Roos 1990). This report also contains specific information on the waste sites considered by this ERA.

Figure 1. North Slope Area Map Depicting Site Investigation Locations.



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2.1 MILITARY SITES

Evidence of a number of old military sites was found on the North Slope. Military records kept by the U.S. Army Corps of Engineers identify three Nike missile sites and seven camps or antiaircraft sites.

Sites may have different operating functions; however, the typical military site on the North Slope consists of several reinforced-concrete foundation pads, scattered bottles and metal cans, and a disposal area. Above ground structures have been demolished and removed. Exceptions are five water well structures made of reinforced concrete. These structures are 2 to 3 ft tall and extend underground into chambers approximately 6 by 8 by 10 ft deep. These structures usually have metal covers that can be opened. The well shaft is located in the floor of the chamber. Other underground structures have been destroyed or filled in. Exceptions are two rooms at the radar site and a few small structures at other sites.

Originally, well covers were locked by Hanford Site contractors to prevent unauthorized access. After the public was allowed in the area for recreation, curious persons began to cut locks and latches off the wells to open the doors. Efforts at opening the covers have been so persistent that securing the doors with locks has been ineffective.

Reports from personnel assigned to military units at and near the North Slope indicate that there was no centralized refuse disposal system in operation for military sites on the North Slope; each site maintained an individual landfill. Investigation of debris at the surface of disposal areas reveals the typical range of military camp items (e.g., food cans and bottles, motor pool refuse, office and personal supplies). Personnel in nearby military units report that no controls were kept on materials disposed of in landfills.

Typically, small amounts of refuse can be found in the vicinity of the military sites. This includes oil and lubricant cans ranging in size from 1 qt to 5 gal. Only a few cans were found to have oil in them. These cans have collected dust, plant debris, and insect bodies so that no free liquid remains. Paint cans also are common and some are partially full of dried paint. Several empty 1-gal solvent cans have been found. Nothing was found at the surface of any landfill that was considered an imminent hazard to personnel or the environment.

At essentially every military site, scraps of asbestos-transite siding from building structures remain. Pieces are generally small, apparently overlooked as materials were being removed from the sites for disposal. Personnel associated with site cleanup in the mid-1970's indicate that building structures were knocked down and buried in pits near the original building locations. Significant quantities of siding materials containing asbestos may be buried near each of the military locations.

While the military was stationed on the North Slope, a main-site motor pool was located across the Columbia River where the main Hanford Site construction and operations were occurring. Major repairs and nonroutine vehicle requirements were completed at this location. Each military site was also reported to have had its own smaller motor pool. Routine maintenance was performed, indicating the potential for used motor oil, solvents, and antifreeze at the sites. Reports indicate that standard procedure at that time was to use used oil for dust control on roads.

Some military sites have maintenance areas with sunken grease pits for convenient access by mechanics to the underside of vehicles. These grease pits may have had dry wells for solvent and oil disposal. However, they have been filled with soil, so this possibility could not be verified.

In addition to the several military camps, three sites were found or reported that are not similar to those described previously: (1) an area of shrapnel concentration; (2) a practice firing range, and (3) a reported bombing range. These potential ordnance sites were investigated by personnel from the U.S. Army Explosive Ordnance Division, Department of the Army, 53rd Ordnance Detachment, with assistance from the Hanford Site Patrol and Westinghouse Hanford Environmental Engineering Group. The Explosive Ordnance Division performed a records search, conducted personal interviews, conducted walk-throughs of the area, and swept the area with mine-detecting equipment, where appropriate. No unexploded ordnance was located during these investigations. The Seattle District Corps of Engineers also investigated the area and found nothing constituting a significant public hazard (Roos 1990).

2.2 HOMESTEAD SITES

Data indicate the entire area included in the North Slope was homesteaded at some time since the late 1800's. The North Slope area was used for orchards and row crops near the river, wheat on the high ground away from the river, and as a grazing area where soil conditions would not allow the raising of crops.

As with military and other sites on the North Slope, homestead structures such as homes and outbuildings were leveled and removed during the mid-1970's. Typically, homestead locations can be identified by scattered cans, bottle shards, and pieces of lumber. Occasionally, a section of fence line remains near the homesite.

Many homestead sites are located within the 190 mi² of the North Slope. Relatively few have been noted in this study. Sites identified in this report have either a remaining cistern or an identifiable garbage disposal pit.

Cisterns are structures for storing water for domestic and livestock use. They are concrete or mortar lined and range in size from 3 to 10 ft in diameter and 4 to 14 ft deep. Water was hauled from the river or a spring and stored in the cistern.

Those cisterns that are largely intact may represent a physical hazard to persons and/or livestock. A person or animal falling into one of the larger cisterns may be injured, and the sheer walls may make escape without assistance difficult. As cisterns are identified, the location is communicated to DOE, Richland Field Office, and the Washington Department of Wildlife. The Washington Department of Wildlife agreed to fence and post warnings at these sites. No cisterns have been located during this investigation on land permitted to the U.S. Fish and Wildlife Service.

No specific hazards have been found associated with homestead garbage disposal pits. One former resident indicated that money was scarce and canned goods were expensive and, consequently, rarely purchased. Most goods came in paper containers. Anything that could be reused was, and the few items that could not be reused were burned.

In the orchard areas, pesticides were used. Pesticides included lime, sulfur, and lead arsenate. In latter years, dichlorodiphenyltrichloroethane (DDT) and other pesticides may have been used. No areas have been found that are suspected of being pesticide disposal areas associated with homestead activity. The 2,4-D burial sites, resulting from the U.S. Bureau of Reclamation work in the 1960's, is documented in the Hanford Site Waste Information Data System.

2.3 CORRECTIVE ACTIONS TAKEN

As a result of the North Slope investigation, the sites thought to contain military ordnance were investigated by the U.S. Army Corps of Engineers and the Explosive Ordnance Division. The sites were determined to pose no immediate risks. The large, unfenced cisterns were also fenced and posted (Roos 1990).

3.0 PRELIMINARY IDENTIFICATION AND SCREENING OF ALTERNATIVES

Response actions associated with the North Slope ERA will consist primarily of demolition activities associated with the numerous physical hazards. These actions may include the backfilling of open pits, cisterns and underground structures. A significant effort will be aimed at performing general debris cleanup because many of the military sites are scattered with military and domestic trash. In an attempt to perform the ERA in a more cost effective manner and since many of the physical hazards pose no environmental threat, they will be removed/stabilized when site characterization activities are performed.

The presence, nature, and extent of environmental contamination associated with waste sites located on the North Slope must be determined prior to the selection of environmental hazard response actions. Field characterization activities will provide information necessary for making this selection. Due to the limited size of the waste sites, a significant volume of contaminants is not anticipated. Based on this preliminary information, removal actions and the no-action alternatives are considered to be the most probable responses if environmental hazards are present. If field characterization activities indicate more extensive contamination, other response alternatives may need to be considered.

4.0 SITE EVALUATION TASKS

The site evaluation methodology was developed in a manner that will minimize the impact on the environment resulting from the investigation while obtaining the information required for selecting the appropriate response actions. The general investigation strategy is provided below. Specific sampling information, including data quality objectives, will be documented in a project-specific sampling plan to be approved by DOE, EPA, and Ecology.

A detailed review of available military archives as well as interviews with personnel stationed at the military sites will be completed. An attempt to obtain information on investigation/closeout activities at other Nike missile sites will be obtained and assessed. Personnel associated with these closeout activities will be contacted in an effort to obtain "lessons learned" information.

Color and infrared aerial photographs of the military installation will be obtained if no existing aerial photographs can be located. The Soil Conservation Service and other government agencies will be contacted to determine if aerial photographs from the 1950's and 60's are available. Based on these photographs, geophysical investigations will be conducted in three areas identified as probable disposal locations. The sites selected will include, as a minimum, one antiaircraft artillery (AAA) and one Nike missile site landfill.

Open cisterns are the primary hazards associated with the homesteading sites. The cisterns pose primarily a physical threat (many are over 5 ft in depth) rather than environmental. Brush and general trash have accumulated in the cisterns. This material will be removed and an inspection made of the cistern to determine if the potential for environmental hazards exists. A screening sample will be taken from three cisterns exhibiting the greatest potential for being an environmental hazard (based on the contents removed and appearance of sediments in the cistern). A composite sample will be taken from the contents of these three cisterns and delivered to an offsite laboratory for analysis.

If the screening samples do not indicate contamination, the cisterns will be backfilled. The remaining cisterns will also be backfilled unless the field team leader (FTL) determines a potential for environmental contamination based on the contents and appearance of the sediments in the cisterns. A screening sample will be taken if required by the FTL. If field screening does identify elevated contaminant levels, an additional sample will be taken from the cistern in question and sent to an offsite laboratory for analysis, and the perimeter of the cistern will be fenced off. The cistern will not be backfilled.

The abandonment of military positions left numerous physical as well as potential environmental hazards. The hazards are common among the sites as the position layout (as noted in field reconnaissance and as-built drawings) and functions were essentially the same. Consequently, the investigational and remedial efforts at these sites will also be similar.

Many of the hazards are of a physical nature (such as tripping hazards etc.) and will not require extensive evaluation prior to taking action. Physical hazards include exposed concrete and rebar, a concrete grease ramp (which has been used recently) and general debris scattered throughout the area. These hazards will be demolished, removed and/or minimized during the characterization phase of the ERA.

A detailed sampling plan will be prepared for performing intrusive and nonintrusive sampling efforts in potential waste disposal areas. Areas of concern at Nike missile sites include acid pits, transformer storage pads, french drains, fuel storage areas, and landfills. Potential contaminants include JP-3 gasoline, red fuming nitric acid, aniline, hydrazine, and trichloroethylene. (The sampling process for investigating the cisterns

associated with the homesteading sites will also be detailed in this plan.) This plan will be submitted for regulatory review and approval.

No information concerning contaminants associated with the AAA site has been located. The contaminants mentioned above are associated with the operation of the Nike missile systems and were not used in operation of the AAA sites. The primary environmental hazards at AAA site are believed to be associated with the vehicle maintenance operations and landfills.

To minimize duplication of effort and reduce costs, investigations for determining environmental hazards at the military sites will be concentrated at one typical Nike and one typical AAA positions. Since the functions of these facilities were all performed by the U.S. Army during the same time periods, it is evident that the environmental hazards posed by each position will be similar.

If the investigations determine there is a potential environmental hazard posed by one of the facilities associated with a position, the similar facility at the other positions will also be investigated. An intensive surface reconnaissance will be performed over each site to ensure that there are no obvious environmental hazards. This survey will look specifically for discolored soils and stressed vegetation.

Field screening analysis will be used for making real time decisions. This will assist in mitigation of many of the physical hazards sooner as well as reduce costs of completing the ERA. A duplicate sample of at least 20% of the field screening samples will be sent for analysis at an offsite laboratory. This will confirm the results of the field screening activities.

Field screening samples will be taken from the underground structures associated with the military positions. If the screening results do not indicate any environmental contaminants, the underground structures will be demolished and the remaining surface depression backfilled. As with the cisterns, a composite sample will be taken from these structures and sent to an offsite laboratory to confirm the field screening results. If field screening does identify elevated contaminant levels, an additional sample will be sent to an offsite laboratory for analysis. Demolition of the structures will not occur if field screening indicates a potential environmental hazard.

5.0 ERA PROPOSAL TASKS

The ERA proposal for the North Slope will be considered a primary document requiring both public review and regulatory approval prior to initiating the chosen remedial alternative(s). The ERA proposal contains the EE/CA performed on the preliminary alternative described in Section 3.0. The proposal will also provide the results of the field characterization activities and further define the implementation tasks and schedule for completing the ERA.

Tasks necessary for completion of the ERA proposal include evaluating the results of the characterization activity, performing the EE/CA, and report preparation. Once the report is completed, it will undergo internal Westinghouse Hanford Company (WHC) review prior to being provided to the EPA,

Ecology, and DOE for concurrent review and comment. The comments provided by these agencies will then be dispositions and incorporated into the document as appropriate. The ERA proposal will then be submitted for a 30-day public review cycle. Public comment will be dispositioned prior to requesting approval of the document by the EPA and Ecology. Once the document is approved, the regulatory agencies will issue an action memorandum directing implementation of the chosen remedial action(s).

6.0 ERA IMPLEMENTATION

Following issuance of the action memorandum, the chosen remedial action will be implemented as directed by the memorandum. All necessary permits will be obtained, equipment procured, and craft personnel scheduled.

7.0 PROJECT SCHEDULE

It is estimated that the North Slope ERA will take approximately 15 mo to complete. The project schedule is presented in Figure 2.

8.0 REFERENCES

- WHC, 1988, *Environmental Investigations and Site Characterization Manual*, WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington.
- Ecology, 1990, *Community Relations Plan for the Hanford Federal Facility Agreement and Consent Order*, State of Washington Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy, Olympia Washington.
- Lucas, 1992, *North Slope Expedited Response Action Field Sampling Plan*, WHC-SD-EN-AP-099, Rev. 0, Westinghouse Hanford Company, Richland, Washington.
- Roos, 1990, *North Slope Investigation Report*, WHC-EP-0359, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

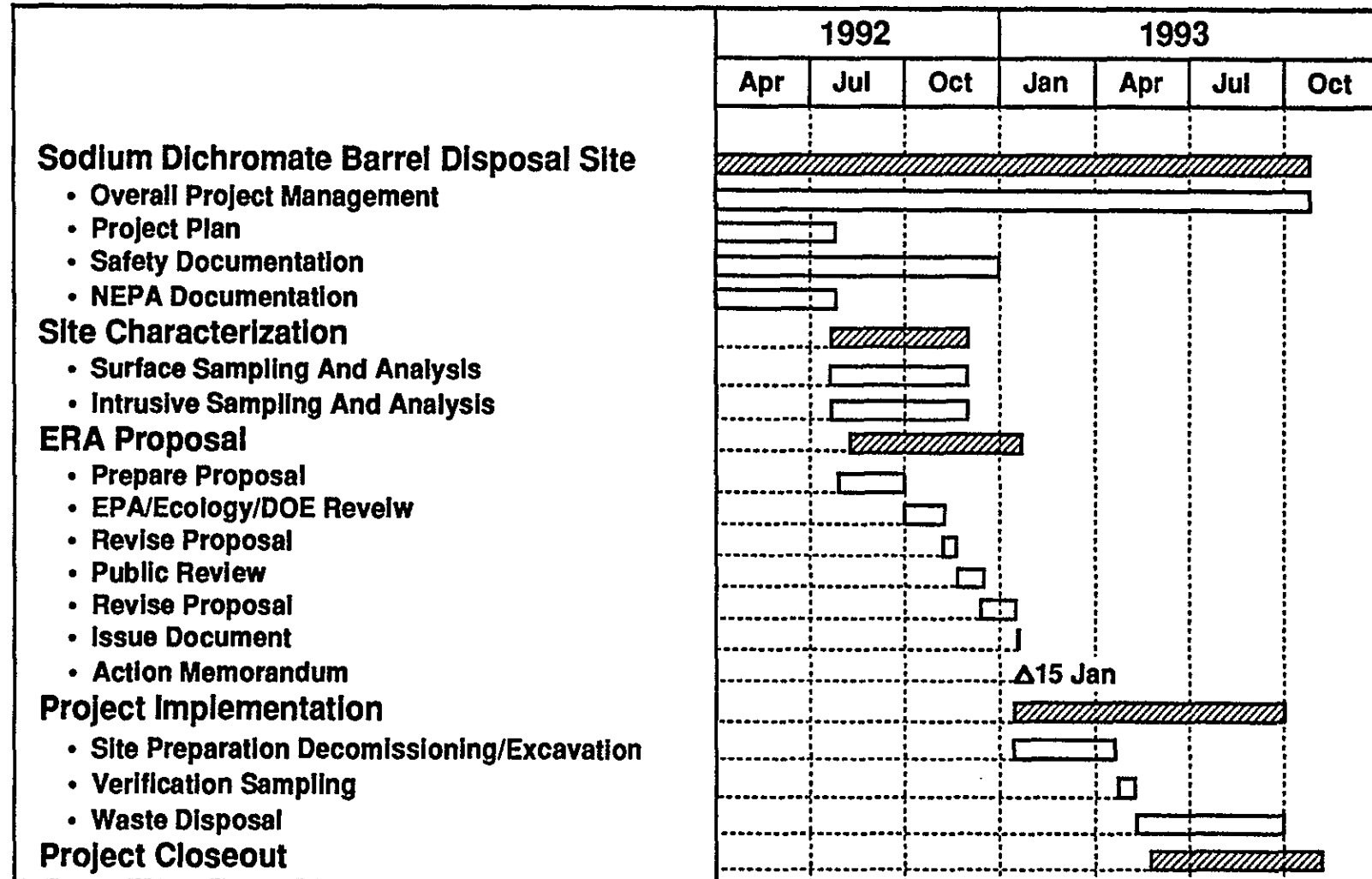


Figure 2. Project Schedule for the North Slope ERA.

ATTACHMENT 1

HEALTH AND SAFETY PLAN

The North Slope ERA will use site-specific safety documents as required by the *Environmental Investigations and Site Characterization Manual* (WHC 1988) to ensure all project activities are conducted in a safe and controlled manner. The necessary documents will be generated as required by WHC's Environmental Field Services Function.

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ATTACHMENT 2

PROJECT MANAGEMENT PLAN

Overall project organization is the responsibility of the WHC's Environmental Remedial Action Group. The project engineer and FTL have been assigned by management.

The FTL will interface with Environmental Field Services, Office of Sample Management (OSM), Traffic and Shipping, Operations Support Services, and other WHC organizations as required for performing field activities as directed by the project engineer. The OSM shall be responsible for arranging off-site laboratory support and validating related chemical analysis. All field activities will be consisted with applicable sections of the *Environmental Investigations and Site Characterization Manual* (WHC 1988) and the *North Slope ERA Project Plan* (Lucas 1992).

Members of the field team shall include the FTL, sample and analytical support personnel, OSS personnel, Decontamination and Decommissioning personnel, a health and safety officer, and a quality assurance representative (as necessary). All field personnel shall be familiar with the approved site specific safety documents prior to initiation of the field activities. It is the responsibility of the FTL to have a copy of this plan, the sites specific safety documents and applicable procedures available for field reference.

ATTACHMENT 3
DATA MANAGEMENT PLAN

Management of all analytical data collected during implementation of the North Slope ERA will follow Environmental Investigation Instruction 14.1, Analytical Laboratory Data Management (WHC 1988).

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ATTACHMENT 4

COMMUNITY RELATIONS PLAN

A community relations plan (CRP) exists for the *Hanford Site Environmental Restoration Program Activities* (Ecology 1990) and applies to the North Slope ERA. The CRP provides continuity and general coordination of all the Environmental Restoration Program activities with regard to community involvement. The program-wide CRP discusses Hanford Site background information and community involvement and concern with Hanford. The CRP was prepared and is implemented by the DOE, EPA, and Ecology.

The public will have a 30-day period to review and comment on the formal North Slope ERA proposal. In addition, the public will be informed on the ERA's progress through quarterly public meetings, project fact sheets, and official ERA project administrative record file accessibility.